

What is claimed is:

1. A master communication device capable of simultaneously communicating with slave communication devices within a limited number prescribed in advance, comprising:

a communication judgment unit configured to judge whether or not one of said slave communication devices which has issued communication request is currently connected;

a communication connection unit configured to connect said slave communication device judged not to be connected by said communication judgment unit;

a connected number judgment unit configured to judge whether or not the number of said slave communication devices connected currently reaches a prescribed number not more than said limited number;

a release selection unit configured to select at least one of said slave communication devices to be released, when determined to have reached said prescribed number; and

a communication release unit configured to release the selected slave communication device.

2. The master communication device according to claim 1, further comprising:

a waiting registration unit configured to register in order said slave communication device which issues said communication request, when determined to have reached said prescribed number; and

a communication connection unit configured to select and connects at least one of said slave communication device in order registered in said waiting registration unit.

3. The master communication device according to claim 1, wherein said release selection unit selects by

priority said slave communication device which has performed the earliest communication among said slave communication devices connected currently.

4. The master communication device according to claim 1, wherein said release selection unit selects by priority the slave communication device which has been connected for the longest time among said slave communication devices connected currently.

5. The master communication device according to claim 1, further comprising a connection release unit configured to release connection for said slave communication device, when the connected slave communication device has not performed data transferring during not less than a prescribed period.

6. The master communication device according to claim 1, wherein release of connection for said slave communication device is performed by setting said slave communication device to be in a electric power saving mode.

7. The master communication device according to claim 6, wherein communication for said slave communication device is performed according to a specification of Bluetooth;

said master communication device is a master equipment;

said slave communication device is a slave equipment; and

said electric power saving mode is a park mode.

8. The master communication device according to claim 1, wherein communication for slave communication device is performed according to a specification of Bluetooth.

9. A slave communication device used in a communication system having a master communication device which can simultaneously communicate with slave communication devices within a limited number prescribed in advance, and a communication control apparatus which controls said slave communication devices connected to said master communication device, comprising:

a master communication device connection determination unit configured to determine whether or not to be connected to said master communication device when communication request for said master communication device has been issued;

a release report signal transmission unit configured to transmit release report to said communication control apparatus, when connection for said master communication device is released; and

a connection release unit configured to release connection for said master communication unit when release instruction for said master communication device is received from said communication control apparatus, during being connected to said master communication device.

10. The slave communication device according to claim 9, wherein said communication for said master communication device is performed according to a specification of Bluetooth; and

release of connection for said master communication device is performed by setting in a park mode.

11. A communication control apparatus which controls a slave communication device connected to a master communication device capable of simultaneously communicating with said slave communication device within a limited number prescribed in advance,

comprising:

a connection report receiving unit configured to receive a connection report from said slave communication device newly connected to said master communication device;

a connection information registration unit configured to register information relating to said slave communication device currently connected to said master communication device;

a connected number judgment unit configured to judge that the number of said slave communication device connected to said master communication device reaches a prescribed number not more than the limited number, based on information registered in said connection information registration unit;

a communication device selection unit configured to select at least one of said slave communication devices that connection for said master communication device is to be released, when determined to have reached said prescribed number; and

a release instruction unit configured to transmit release instruction to said slave communication device selected by said communication device selection unit.

12. The slave communication device according to claim 11, wherein communication between said master communication device and said slave communication device is performed according to a specification of Bluetooth; and

a release of connection between said master communication device and said slave communication device is performed to be set in a park mode.

13. A communication system, comprising:

at least one of slave communication devices; and  
a master communication device configured to be able

to communicate simultaneously with said slave communication device within a limited number prescribed in advance,

wherein said master communication device includes:

a communication judgment unit configured to judge whether or not one of said slave communication devices which has issued communication request is currently connected;

a communication connection unit configured to connect said slave communication device determined not to be connected by said communication judgment unit;

a connected number judgment unit configured to judge whether or not the number of said slave communication devices connected currently reaches a prescribed number not more than said limited number;

a release selection unit configured to select at least one of said slave communication devices to be released, when determined to have reached said prescribed number; and

a communication release unit configured to release the selected slave communication device.

14. The communication system according to claim 13, wherein said master communication device includes:

a waiting registration unit configured to register said slave communication device which has issued said communication request in order, when determined to have reached said prescribed number; and

a communication connection unit configured to select and connects at least one of said slave communication devices in order registered to said waiting registration unit.

15. The communication system according to claim 13, wherein said slave communication device includes:

a master communication device connection judgment

unit configured to judge whether or not to be connected to said master communication device, when communication request for said master communication device has been issued;

a release report signal supply unit configured to transmit a release report to said communication control apparatus when connection for said master communication device is released; and

a connection release unit configured to release connection for said master communication device when release instruction for said master communication device is received from said communication control apparatus, during being connected to said master communication apparatus,

wherein said communication control apparatus includes:

a connection report receiving unit configured to receive a connection report from said slave communication device newly connected to said master communication device;

a connection information registration unit configured to register information relating to said slave communication devices currently connected to said master communication device;

a connected number judgment unit configured to judge whether or the number of said slave communication device reaches a prescribed number not more than said limited number, based on the information registered to said connection information registration unit;

a communication device selection unit configured to select at least one of said slave communication devices of which connection for said master communication device is to be released, when determined to have reached said prescribed number; and

a release instruction unit configured to transmit release instruction to said slave communication device

selected by said communication device selection unit.

16. The slave communication device according to claim 13, wherein communication between said master communication device and said slave communication device is performed according to a specification of Bluetooth; and

a release of connection between said master communication device and said slave communication device is performed by setting in a park mode.

17. A communication control program capable of reading by a computer which performs communication between at least one of slave communication devices, and a master communication device capable of simultaneously communicating with said slave communication devices within a limited number prescribed in advance, comprising:

judging by said master communication device whether or not one of said slave communication devices which has issued communication request is connected currently;

connecting said slave communication devices judged that said slave communication device is not connected currently, to said master communication device;

judging by said master communication device whether or not the number of said slave communication devices connected currently reaches a prescribed number not more than said a limited number;

selecting by said master communication device at least one of said slave communication devices to be released, when determined to have reached said prescribed number; and

releasing the selected slave communication device by said master communication device.

18. The communication control program according to

claim 17, further comprising:

judging by said master communication device whether or not one of said slave communication devices which has issued communication request is connected currently;

judging by said master communication device whether or not the number of said slave communication devices connected currently reaches a prescribed number not more than said limited number;

registering in order said slave communication device which has issued the communication request to a waiting registration unit of said master communication device, when determined to have reached said prescribed number;

selecting by said master communication device at least one of said slave communication devices to be released, when determined to have reached said prescribed number; and

selecting at least one of said slave communication devices and connecting it to said master communication device, in order registered to said waiting registration unit.

19. The communication control program according to claim 17, comprising:

judging by said slave communication devices whether or not to be connected to said master communication device, when communication request for said master communication device is issued;

transmitting a release report from said slave communication device to said communication control apparatus when connection for said master communication device is released;

releasing connection between said master communication device and said slave communication device when a release instruction for said master communication device is received from said communication control



apparatus, during being connected to said master communication device;

receiving by said communication control apparatus a connection report from said slave communication devices newly connected to said master communication device;

registering information relating to said slave communication devices currently connected to said master communication device, to said communication control apparatus;

judging by said communication control apparatus whether or not the number of said slave communication devices connected to said master communication device reaches a prescribed number not more than said limited number, based on the registered information;

selecting by said communication control apparatus at least one of said slave communication devices of which connection for master communication device is to be released, when determined to have reached said prescribed number; and

transmitting a release instruction from said communication control apparatus to the selected slave communication device.

20. The slave communication device according to claim 17, wherein communication between said master communication device and said slave communication device is performed according to a specification of Bluetooth; and

a release of connection between said master communication device and said slave communication devices is performed by setting in a park mode.